

SEND RESULTS TO:

Compass Environmental, Inc.
 1751 McCollum Parkway
 Kennewick, WA 98344
 Phone (770) 499-7127
 Fax (770) 423-7402

PROJECT NAME:
 PROJECT NO.:

ARIZONA BUILDINGS
 3025

CHAIN OF CUSTODY

SAMPLE NUMBER	SAMPLE NUMBER	SAMPLE NUMBER	SAMPLE NUMBER	SAMPLE NUMBER
DUST-01	DUST-06	DUST-11	DUST-16	DUST-21
DUST-02	DUST-07	DUST-12	DUST-17	DUST-22
DUST-03	DUST-08	DUST-13	DUST-18	DUST-23
DUST-04	DUST-09	DUST-14	DUST-19	DUST-24
DUST-05	DUST-10	DUST-15	DUST-20	DUST-25

NAME OF ANALYTICAL LABORATORY: MVA

ACTION TAKEN ON SAMPLES	SIGNATURE	PRINT NAME	TITLE	DATE/TIME RECEIVED	DATE/TIME TRANSFERRED
Collected	William M. Spring	William M. Spring	Technical Director	8/18/05	8/22/05 LONE
Rec'd	James R. Daulton	James R. Daulton	Executive Director	8/22/05	

Report of Results: MVA 6423

Arizona Building Dust
Tucson Civic Center Non-Attic
Environmental Forensic Microscopy Analysis

Prepared for:

Compass Environmental Inc.
1751 McCollum Parkway
Kennesaw, GA 30144

Respectfully Submitted by:



James R. Millette, Ph.D.
Executive Director

MVA Scientific Consultants
3300 Breckinridge Boulevard
Suite 400
Duluth, GA 30096

10 January 2007



Report of Results: MVA 6423

**Arizona Building Dust – Civic Center Non-Attic Samples
Environmental Forensic Microscopy Analysis**

INTRODUCTION

This report contains the results of analytical work performed on dust from microvac samples received at MVA Scientific Consultants' laboratory on 23 August 2005 via Federal Express. As shown in Table 1 below, the samples that are the subject of this report were the residual dusts retained on the microvac sampler nozzles collected from horizontal surfaces of the Tucson Civic Center after the rest of the sample was prepared following the ASTM D5755 method. It was requested that MVA Scientific Consultants perform an environmental forensic microscopy examination of dust retained on the microvac sampler nozzles. The analyses were done during the period of 18 December 2006 through 10 January 2007.

Table 1. Sample Information

Compass Sample #	MVA ID#	Description
Dust 32	Q1447	Blank
Dust 40	Q1448	Tucson Civic, 40 ft. from west end of meeting rm. Hallway
Dust 41	Q1449	Tucson Civic, Mohave Rm. West side at center, tall ceiling
Dust 42	Q1450	Tucson Civic, Graham Rm. Tall ceiling
Dust 43	Q1451	Tucson Civic, Meeting Rm. Lobby, NE quadrant
Dust 44	Q1452	Tucson Civic, Rm. 362-1, south of hallway, top of light fixture

ANALYTICAL METHODS

The samples were first examined by stereomicroscopy using a magnification range from 6.5X to 40X. Analysis was then performed by polarized light microscopy including microchemical tests utilizing an Olympus BH-2 polarized light microscope having a magnification range from 40X to 1000X.

RESULTS AND DISCUSSION

The dusts in Samples Q1448 through Q1451 have the same appearance. They are all fine granular dusts, gray in color with evident fibers. They contain vermiculite, gypsum and chrysotile asbestos (Figures 1 through 3). The particles in the dusts are consistent with normal indoor building dusts^{1,2} (including cotton, plant fragments and other fibers) mixed with fallout from the fireproofing (containing vermiculite, gypsum and chrysotile) that is located in the building.

REFERENCES

1. Millette, J.R., Lloy, P.J., Wietfeldt, J., Hopen, T.J., Gipp, M., Padden, T., Singsank, C., and Lepow, J., "A Microscopical Study of the General Composition of Household Dirt", *Microscope*, 51(4): 201-207, 2003.
2. Hopen, T. J. and Millette, J. R., "Microscopical Characterization of IAQ Dust Particles", in *Proceedings of Engineering Solutions to Indoor Air Quality Problems*, VIP.51, Air & Waste Management Association, pp. 437-444, 1995.

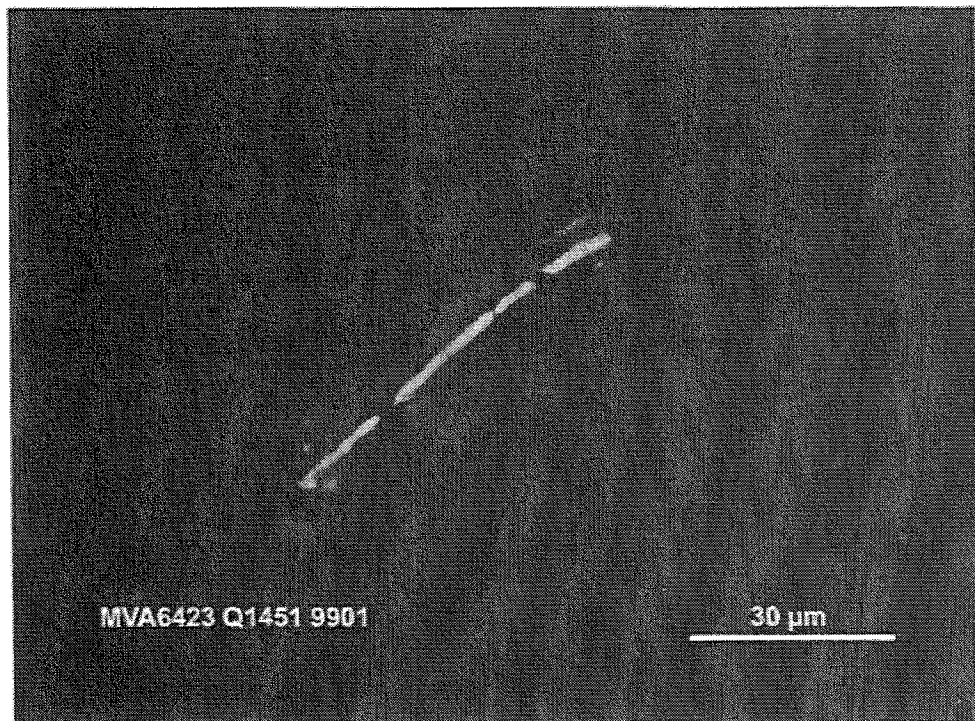


Figure 1. Polarized light microscope image (darkfield mode) of a chrysotile bundle among gypsum and vermiculite flakes in Sample Q1451

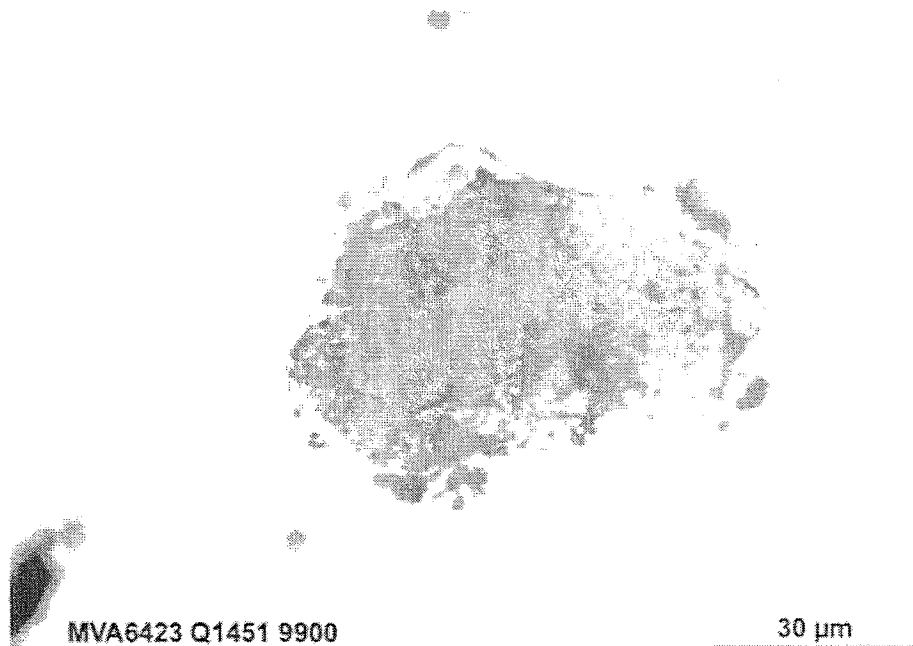


Figure 2. Polarized light microscope image (brightfield mode) of a vermiculite flake in Sample Q1451.



Figure 3. Polarized light microscope image (brightfield mode) of gypsum crystals in Sample Q1451.

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 1751 McColburn Parkway
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PROJECT NAME:
 PROJECT NO.:

Arizona Buildings
2025

CHAIN OF CUSTODY

SAMPLE NUMBER	SAMPLE NUMBER	SAMPLE NUMBER	SAMPLE NUMBER	SAMPLE NUMBER
DUST-01	DUST-06	DUST-11	DUST-16	DUST-21
DUST-02	DUST-07	DUST-12	DUST-17	DUST-22
DUST-03	DUST-08	DUST-13	DUST-20	DUST-23
DUST-04	DUST-09	DUST-14	DUST-21	DUST-24
DUST-05	DUST-10	DUST-15	DUST-22	DUST-25

NAME OF ANALYTICAL LABORATORY: MAVA

ACTION TAKEN ON SAMPLES	SIGNATURE	PRINT NAME	TITLE	DATE/TIME RECEIVED	DATE/TIME TRANSFERRED
Collected	<i>William M. Young</i>	William M. Young	Technical Director	8/18/05	8/22/05 WME
Rec'd	<i>James R. Young</i>	James R. Young	Executive Director	8/22/05	

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Compass Environmental, Inc.
 1751 McCollum Parkway
 Kennesaw, GA 30144
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 Fax (770) 423-7402

PROJECT NAME:
 PROJECT NO:

Arizona Bulldogs
 2005

CHAIN OF CUSTODY

SAMPLE NUMBER	SAMPLE NUMBER	SAMPLE NUMBER	SAMPLE NUMBER	SAMPLE NUMBER
DUST-40	DUST-45	DUST-50		
DUST-41	DUST-46	DUST-51		
DUST-42	DUST-47	DUST-52		
DUST-43	DUST-48	DUST-53		
DUST-44	DUST-49			

NAME OF ANALYTICAL LABORATORY: MVA

ACTION TAKEN ON SAMPLES	SIGNATURE	PRINT NAME	TITLE	DATE/TIME RECEIVED	DATE/TIME TRANSFERRED
Collected	<i>William M. Swing</i>	William M. Swing	Technical Director	8/19/05	8/22/05 COME
Rec'd	<i>J. R. Swingle</i>	JAMES R. SWINGLE	Executive Director	8/19/05	

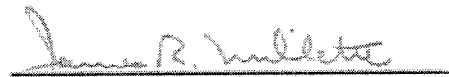
Report of Results: MVA 6423

Arizona Building Dust
Tucson Civic Plaza Exhibit Hall
Environmental Forensic Microscopy Analysis

Prepared for:

Compass Environmental Inc.
1751 McCollum Parkway
Kennesaw, GA 30144

Respectfully Submitted by:



James R. Millette, Ph.D.
Executive Director

MVA Scientific Consultants
3300 Breckinridge Boulevard
Suite 400
Duluth, GA 30096

10 January 2007



Report of Results: MVA 6423

**Arizona Building Dust – Tucson Civic Plaza Exhibit Hall
Environmental Forensic Microscopy Analysis**

INTRODUCTION

This report contains the results of analytical work performed on dust from microvac samples received at MVA Scientific Consultants' laboratory on 23 August 2005 via Federal Express. As shown in Table 1 below, the samples that are the subject of this report were the residual dusts retained on the microvac sampler nozzles (Figure 1) collected from horizontal surfaces of the Tucson Civic Plaza Exhibit Hall after the rest of the sample was prepared following the ASTM D5755 method. It was requested that MVA Scientific Consultants perform an environmental forensic microscopy examination of dust retained on the microvac sampler nozzles. The analyses were done during the period 08 December 2006 through 10 January 2007.

Table 1. Sample Information

Compass Sample #	MVA ID#	Description
Dust 01	Q1418	Civic Plaza, Exhibit Hall B, Column enclosure B4, door ledge
Dust 02	Q1419	Civic Plaza, Exhibit Hall B, Column enclosure B5, door ledge
Dust 03	Q1420	Civic Plaza, Exhibit Hall B, Column enclosure A3, door ledge
Dust 04	Q1421	Blank

ANALYTICAL METHODS

The samples were first examined by stereomicroscopy using a magnification range from 6.5X to 40X. Analysis was then performed by polarized light microscopy including microchemical tests utilizing an Olympus BH-2 polarized light microscope having a magnification range from 40X to 1000X.

RESULTS AND DISCUSSION

The dusts in Samples Q1418 through Q1420 have the same general appearance. They are all fine granular dusts, tan to beige in color with evident fibers. They contain vermiculite, gypsum and chrysotile asbestos (Figures 2 through 4). The particles in the dusts are consistent with normal indoor building dusts^{1,2} (including cotton and other fibers) mixed with fallout from the fireproofing (containing vermiculite, gypsum and chrysotile) that is located in the building.

REFERENCES

1. Millette, J.R., Liou, P.J., Wietfeldt, J., Hopen, T.J., Gipp, M., Padden, T., Singsank, C., and Lepow, J., "A Microscopical Study of the General Composition of Household Dirt", *Microscope*, 51(4): 201-207, 2003.
2. Hopen, T. J. and Millette, J. R., "Microscopical Characterization of IAQ Dust Particles", in *Proceedings of Engineering Solutions to Indoor Air Quality Problems*, VIP.51, Air & Waste Management Association, pp. 437-444, 1995.

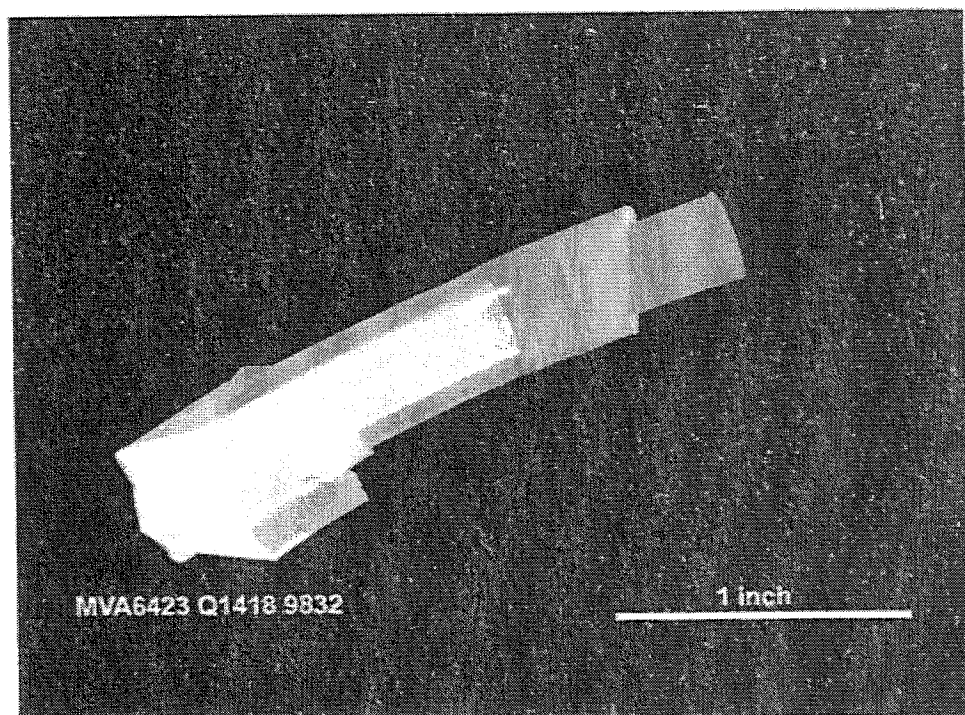


Figure 1. Microvac sampling nozzle from Sample Q1418.

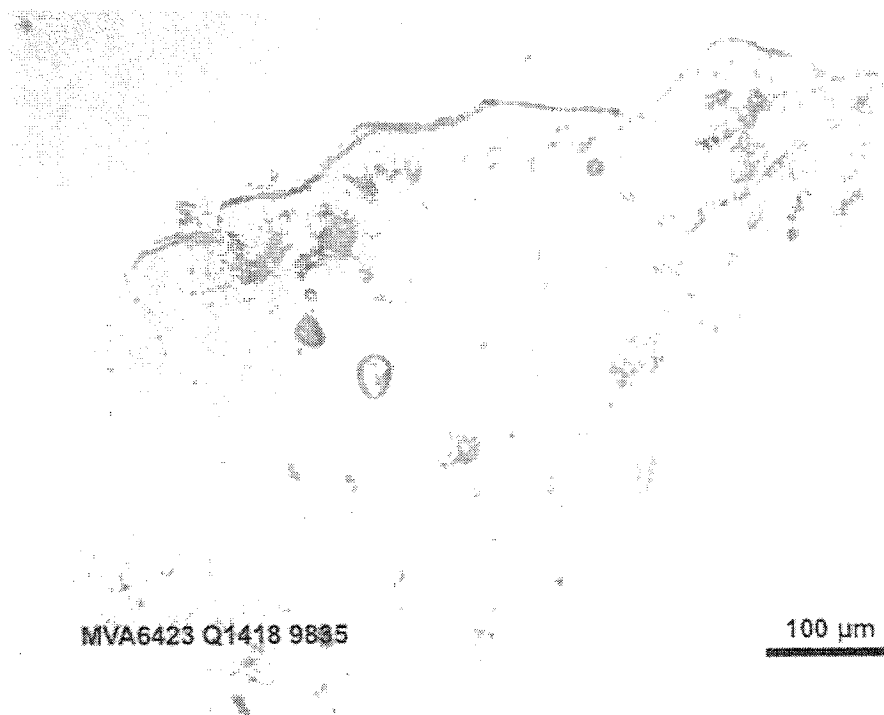


Figure 2. Polarized light microscope image (brightfield mode) of a vermiculite flake in Sample Q1418.

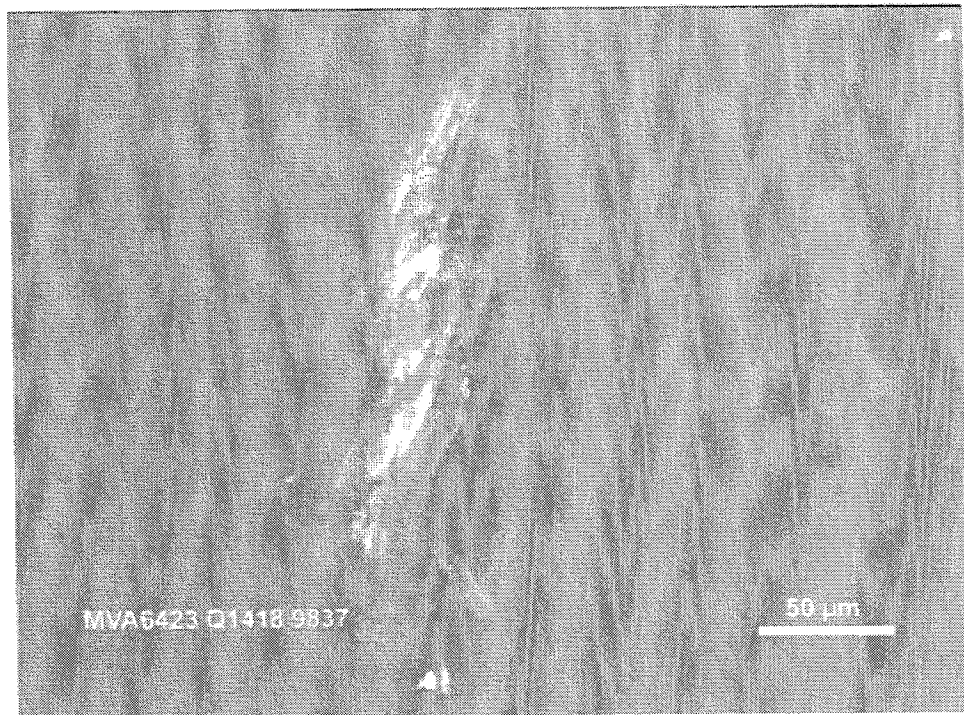


Figure 3. Polarized light microscope image of a chrysotile bundle in Sample Q1418.

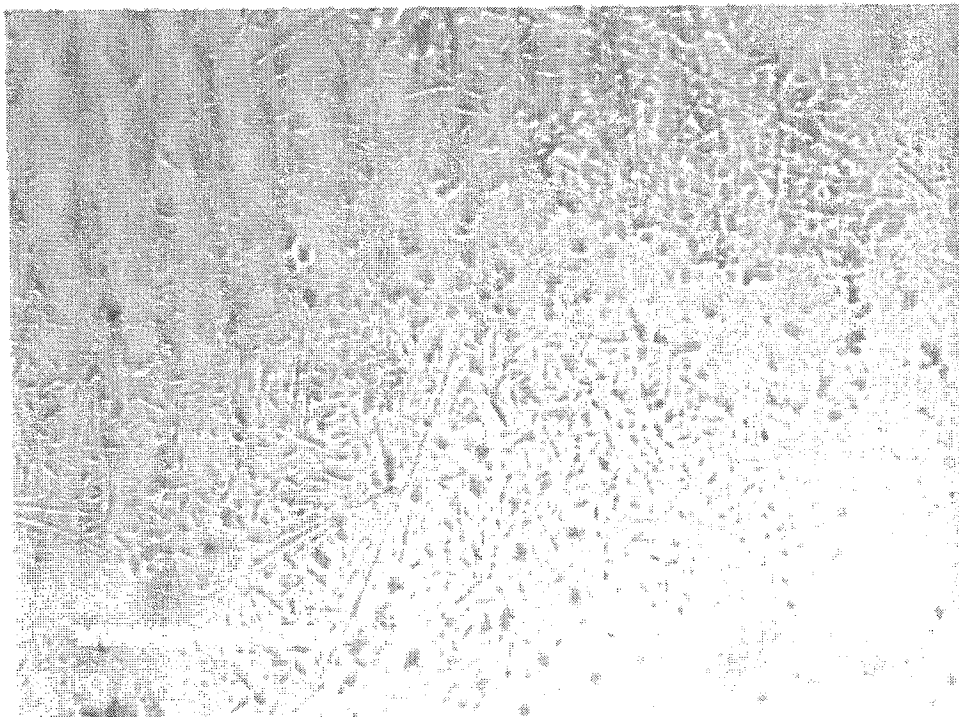


Figure 4. Polarized light microscope image of gypsum crystals in Sample Q1418.

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ARIZONA BUILDINGS
 3025

CHAIN OF CUSTODY

SAMPLE NUMBER	SAMPLE NUMBER	SAMPLE NUMBER	SAMPLE NUMBER	SAMPLE NUMBER
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DUST-02	DUST-07	DUST-12	DUST-17	DUST-24
DUST-03	DUST-08	DUST-13	DUST-20	DUST-25
DUST-04	DUST-09	DUST-14	DUST-21	DUST-26
DUST-05	DUST-10	DUST-15	DUST-22	DUST-27
				DUST-28
				DUST-29
				DUST-30
				DUST-31
				DUST-32

NAME OF ANALYTICAL LABORATORY: MVA

ACTION TAKEN ON SAMPLES	SIGNATURE	PRINT NAME	TITLE	DATE/TIME RECEIVED	DATE/TIME TRANSFERRED
Collected	<i>William M. Young</i>	William M. Young	Technical Director	8/22/05	8/22/05 WME
Rec'd	<i>James R. White</i>	James R. White	Executive Director	8/22/05	